7 Error and Status Conditions

Overview

The Error and Status Conditions section provides listings and technical descriptions of errors and status conditions, text displays, and reports which can occur in DSPower series and Hypersignal-Macro series software. Error and status conditions are further subdivided into the following categories:

- DSPower-Block Diagram
- DLL Functions
- DSP Engines

While DSPower-Block Diagram error and status conditions may cause display of an error number for documentation purposes, these conditions do not currently produce numeric constants which can be utilized by C/C++ or DSP Engine native language programs.

By contrast, DLL function error and status conditions are defined as numeric constants, which are returned by the functions themselves or by DSxxxGetErrorStatus routines located in various DLLs. They can also be accompanied by error and status text displays and reports which appear in the Engine Manager error/status listbox, if enabled

(see Signalogic DSP Software Users Guide section 7.5.3, Error/Status Window in Engine Manager).

NOTE: In some extreme cases, a DSPower series DLL may also independently display its own message box, which indicates a serious system error, and which should be carefully noted and reported to Signalogic if it occurs.

DSP Engine error and status conditions and text displays are generated and returned by programs such as Hypersignal-Macro series software or MATLAB, even though they may appear in status boxes or listboxes maintained by DSPower-Block Diagram software or a DSPower series DLL. For example, Engine Manager, which is part of DSPower-HWLib and DSPower-SPLib software, offers an error/status listbox which can be displayed as a debug tool, and which shows error and status conditions and text displays generated by DSP Engines as well as itself and other DSPower series DLLs. For more information, see Signalogic DSP Software Users Guide section 7.5.3, Error/Status Window in Engine Manager.

Error and Status Condition Categories

DSPower-Block Diagram Error and Status Conditions

DLL Error and Status Conditions

DSP Engine Error Conditions

See Also

Error and Status Condition Numeric List and Cross Reference

Below is a numeric listing of all error and status conditions, cross-referenced by page number.

Error and Status Condition Numeric List and Cross Reference

In the table below, there are two subtleties worth pointing out. First, positive error values indicate errors that could reasonably be expected to happen due to operator error, and should be recoverable without difficulty. Negative error values indicate a more serious level of error, such as necessary program files not installed correctly, Windows

resource problems, incorrect calling application usage of DLL functions, or internal DSPower series DLL errors.

Second, error values are grouped according to function. Error values -1 through -9 are general DLL errors (located in dllerr.h). Error values -10 through -49 can be generated by Engine Manager (enmgr.dll, located in enmgr.h), values -50 through -99 by Hardware Library (hwlib.dll, located in hwlib.h), and values -100 through -149 by Hardware Manager (hwmgr.dll, located in hwmgr.h).

Number	Error Definition	Page
11	DSDSPFILENOTFOUND	451
10	DSHARDWARENOTRESPONDING	451
2	DSCOULDNOTOPENENGINE	445
1	DSINVALIDENGINEPATH	446
-1	DSCOULDNOTCREATEBKGNDWINDOW	443
-2	DSCOULDNOTSTARTBKGNDTASK	444
-3	DSNOBKGNDWINDOW	444
-4	DSCOULDNOTINITIALIZEDLL	444
-10	DSENGINETIMEOUT	446
-11	DSCOULDNOTOPENPIPE	446
-12	DSCOULDNOTSTARTENGINE	446
-13	DSNOENGINESOPEN	446
-14	DSNOENGINEFOUNDINLIST	447
-15	DSENGINEHANDLEWASNULL	447
-16	DSENGINEMEMORYDISCARDED	447
-50	DSINVALIDBOARDHANDLE	451
-51	DSCOULDNOTOPENTEMPLATEFILE	451
-52	DSCOULDNOTCREATESOURCEFILE	451
-53	DSCREATINGENGINEPROGRAMERROR	451

-54	DSUNABLETOALLOCATEMEMORY	451
-55	DSUNABLETOREADTEMPLATEFILE	451
-56	DSERRORINDATAPARAM	451
-57	DSBOARDDOESNOTSUPPORTCALL	451
-58	DSINVALIDWORDLENGTH	451
-59	DSINVALIDMEMORYTYPE	451
-60	DSINVALIDBOARDDESIGNATOR	451
-61	DSBOARDNOTINHWSETUPFILE	451
-62	DSALLBOARDHANDLESALLOCATED	451
-63	DSINVALIDPROCESSORNUMBER	451
-100	DSUNABLETOREADHWSETUPFILE	448
-101	DSCOULDNOTLOCKHWLIST	448
-102	DSBOARDDESIGNATORNOTLISTED	449
-103	DSCOULDNOTFINDHWSETUPFILE	449
-104	DSCOULDNOTINCREASEHWLISTMEM	449
-105	DSHWSETUPFILENOTYETREAD	449

Related Topics

General DLL Error and Status Conditions

Engine Error and Status Conditions

Hardware Manager Error and Status Conditions

Hardware Library Error and Status Conditions

Signal Processing Library Error and Status Conditions

General Topics

Error Handling in Engine Manager

Error Handling in Hardware Manager

Error/Status Window in Engine Manager

7.1 DSPower-Block Diagram Error and Status Conditions

This section covers error and status conditions and text displays generated by DSPower-Block Diagram software only. For error and status conditions and text displays generated by DSP Engines and shown in popup boxes or listboxes during interactive or block diagram operation, see section 7.3 below, DSP Engine Error and Status Conditions.

7.2 DLL Error and Status Conditions

This section defines the DLL error and status numerical constants which can be returned by functions in DSPower series DLLs.

In the DSPower series DLL error-handling scheme, a relatively small number of error and status constants are returned directly by the function called. However, most functions either return NULL, or zero, to indicate failure, and TRUE, or non-zero, to indicate success. Often times, the non-zero value returned on success is the actual return value of the function itself. Obvious examples include the DSEngineOpen and DSAssignBoard calls in DSPower-HWLib software, which return engine and board handles, respectively.

Each DLL has a "base level" error/status routine which can be used to investigate error conditions. Currently, these calls are as follows:

Error/Status Call	**DLL**
DSGetEngMgrErrorStatus	Engine Manager (enmgr.dll)
DSGetHWMgrErrorStatus	Hardware Manager (hwmgr.dll)

DSGetHWLibErrorStatus	Hardware Library (hwlib.dll)
DSGetSPLibErrorStatus	Signal Processing Library (splib.dll)

In some cases, there may be additional "higher-level" error/status routines available. For example, Engine Manager also offers the DSGetEngineErrorStatus call to investigate problems associated with a specific engine; this call requires a valid engine handle as an input parameter.

Note also that error and status numerical constants are not the whole story. Engine Manager (enmgr.dll) maintains a "status listbox" which can be made visible using the DSShowEngMgrStatusWindow call. This status window shows a history of both status and error conditions resulting from most Engine Manager and Hardware Manager calls. For information about this status window, see Signalogic DSP Software Users Guide section 7.5.3, Error/Status Window in Engine Manager. For complete information on error handling in Engine Manager, see Signalogic DSP Software Users Guide section 7.5, Error Handling in Engine Manager.

NOTE: In some extreme cases, a DSPower series DLL may also independently display its own message box, which indicates a serious system error, and which should be carefully noted and reported to Signalogic if it occurs.

DLL Error and Status Message Categories

7.2.1 General DLL Error and Status Conditions

Below is a source code example of using the Engine Manager "base level" error/status routine. The shows further investigation after a DSPower-HWLib software DSEngineOpen call failure:

```
if (!DSEngineOpen(szEnginePath, szWaveformPath)) {
    nErrorType = DSGetEngMgrErrorStatus();
    ...do error processing...
}
```

In the above example, the actual return value of DSEngineOpen would be NULL in the case of failure, since a non-NULL value would be a valid engine handle. Thus, to find out more information, the DSGetEngMgrErrorStatus call is used.

Below is a listing of ***general DLL*** error values which can be returned by DSGetEngMgrErrorStatus, along with a brief description of their meaning. These constants can be found in the dllerr.h include file; for a complete list of all DSPower series software error conditions by error number, see Error and Status Condition Numeric List and Cross-Reference, in the Overview section of this chapter, Error and Status Conditions.

Note that it is possible in some circumstances for the error values listed below to also be returned by the DSGetHWMgrErrorStatus, DSGetHWLibErrorStatus, and DSGetSPLibErrorStatus routines, besides DSGetEngMgrErrorStatus. Note also that in C/C++ programs, it is safest to treat these error definitions as integer types, since some values are "positive" and some "negative". See Error and Status Condition Numeric List and Cross Reference, above, for more information about this grouping.

General DLL Error Values

DSCOULDNOTCREATEBKGNDWINDOW

DSCOULDNOTSTARTBKGNDTASK

DSNOBKGNDWINDOW

DSCOULDNOTINITIALIZEDLL

Related Topics

General DLL Error and Status Conditions

Engine Error and Status Conditions

Hardware Manager Error and Status Conditions

Hardware Library Error and Status Conditions

Signal Processing Library Error and Status Conditions

General Topics

Error Handling in Engine Manager

Error Handling in Hardware Manager

Error/Status Window in Engine Manager

Error and Exception Handling in DSPower-HWLib and DSPower-SPLib Software

DSCOULDNOTCREATEBKGNDWINDOW

The background (hidden) window needed by enmgr.dll could not be created.

DSCOULDNOTSTARTBKGNDTASK

The background (hidden) task needed by enmgr.dll could not be started.

DSNOBKGNDWINDOW

The command failed because there was no background window.

DSCOULDNOTINITIALIZEDLL

Enmgr.dll itself could not be initialized.

7.2.2 Engine Manager Error and Status Conditions

Below is a source code example of using the Engine Manager "base level" error/status routine. The shows further investigation after a DSEngineOpen failure:

```
if (!DSEngineOpen(szEnginePath, szWaveformPath)) {
    nErrorType = DSGetEngMgrErrorStatus();
    ...do error processing...
}
```

In the above example, the actual return value of DSEngineOpen would be NULL in the case of failure, since a non-NULL value would be a

valid engine handle. Thus, to find out more information, the DSGetEngMgrErrorStatus call is used.

Below is a listing of error values returned by DSGetEngMgrErrorStatus, along with a brief description of their meaning. These constants can be found in the enmgr.h include file; for a complete list of all DSPower series software error conditions by error number, see Error and Status Condition Numeric List and Cross-Reference, in the Overview section of this chapter, Error and Status Conditions. Note that in C/C++ programs, it is safest to treat these error definitions as integer types, since some values are "positive" and some "negative". See Error and Status Condition Numeric List and Cross Reference, above, for more information about this grouping.

Engine Manager Error Values

DSCOULDNOTOPENENGINE

DSINVALIDENGINEPATH

DSENGINETIMEOUT

DSCOULDNOTOPENPIPE

DSCOULDNOTSTARTENGINE

DSNOENGINESOPEN

DSNOENGINEFOUNDINLIST

DSENGINEHANDLEWASNULL

DSENGINEMEMORYDISCARDED

Related Topics

General DLL Error and Status Conditions

Engine Error and Status Conditions

Hardware Manager Error and Status Conditions

Hardware Library Error and Status Conditions

Signal Processing Library Error and Status Conditions

General Topics

Error Handling in Engine Manager

Error Handling in Hardware Manager

Error/Status Window in Engine Manager

Error and Exception Handling in DSPower-HWLib and DSPower-SPLib Software

DSCOULDNOTOPENENGINE

Probably indicates DSP Engine executable file could not be located.

DSINVALIDENGINEPATH

An invalid engine path was specified in a DSEngineOpen call.

DSENGINETIMEOUT

Time-out limits were exceeded in waiting for the DSP Engine to successfully open and initialize, or respond to a command or request.

DSCOULDNOTOPENPIPE

The Pipe.386 VxD could not be opened for a DOS DSP Engine. Make sure that pipe.386 is listed in the "386Enh" section of the system.ini file on the x:\windows subdirectory.

DSCOULDNOTSTARTENGINE

The DSP Engine could not be initialized correctly.

DSNOENGINESOPEN

A call was made requiring an engine handle but no engines were open.

DSNOENGINEFOUNDINLIST

A call was made using an engine handle which didn't specify an engine currently being maintained by enmgr.dll.

DSENGINEHANDLEWASNULL

A call was made using a NULL engine handle.

DSENGINEMEMORYDISCARDED

A call was made using an engine handle which pointed to memory already discarded.

7.2.3 Hardware Manager Error and Status Conditions

Below is a source code example of using the Hardware Manager "base level" error/status routine. The shows further investigation after a DSSetHWMgrCurVal failure:

```
if (!DSSetHWMgrCurVal(szBoardDesignator)) {

    nErrorType = DSGetHWMgrErrorStatus();
    ...do error processing...
}
```

In the above example, the actual return value of DSSetHWMgrCurVal would be NULL in the case of failure. Thus, to find out more information, the DSGetHWMgrErrorStatus call is used.

Below is a listing of error values returned by DSGetHWMgrErrorStatus, along with a brief description of their meaning. These constants can be found in the hwmgr.h include file; for a complete list of all DSPower series software error conditions by error number, see Error and Status Condition Numeric List and Cross-Reference, in the Overview section of this chapter, Error and Status Conditions. Note that in C/C++ programs, it is safest to treat the above error definitions as integer types, since some values are "positive" and some "negative". See Error and Status Condition Numeric List and Cross Reference, above, for more information about this grouping.

Hardware Manager Error Values

DSUNABLETOREADHWSETUPFILE

DSCOULDNOTLOCKHWLIST

DSBOARDDESIGNATORNOTLISTED

DSCOULDNOTFINDHWSETUPFILE

DSCOULDNOTINCREASEHWLISTMEM

DSHWSETUPFILENOTYETREAD

Related Topics

General DLL Error and Status Conditions

Engine Error and Status Conditions

Hardware Manager Error and Status Conditions

Hardware Library Error and Status Conditions

Signal Processing Library Error and Status Conditions

General Topics

Error Handling in Engine Manager

Error Handling in Hardware Manager

Error/Status Window in Engine Manager

Error and Exception Handling in DSPower-HWLib and DSPower-SPLib Software

DSUNABLETOREADHWSETUPFILE

Unable to read the Hardware Setup File.

DSCOULDNOTLOCKHWLIST

Unable to lock the global memory hardware list maintained inside hwmgr.dll

DSBOARDDESIGNATORNOTLISTED

A board designator input to a hwmgr.dll function was not listed in the Hardware Setup File.

DSCOULDNOTFINDHWSETUPFILE

The Hardware Setup File could not be located.

DSCOULDNOTINCREASEHWLISTMEM

The global memory hardware list maintained inside hwmgr.dll could not be increased in size (to accommodate additional Hardware Setup File entries).

DSHWSETUPFILENOTYETREAD

A function in Hardware Manager was called which needed access to Hardware Setup File data, but the DSReadHWSetupFile function had not yet been called.

7.2.4 Hardware Library Error and Status Conditions

The DSPower-HWLib error handling scheme is straightforward. Most library calls return a non-zero value on success, and a zero (NULL) on failure. When calls into hwlib.dll fail, the DSGetHWLibErrorStatus and DSGetEngineErrorStatus calls can be used to attempt to learn more information about the most recent failure. These calls return error and status conditions associated with DSP/analog hardware and DSP/math functions.

Generally, at any given time both of these calls will return the same value. However, there is an important difference: the latter retrieves error conditions associated with a particular engine, while the former returns an overall DLL value. Thus, if more than one engine is open at one time, it is possible that the DSGetHWLibErrorStatus value could be overwritten as a result of consecutive unrelated engine calls.

For error and status conditions associated with engine problems, the DSGetEngMgrErrorStatus and DSGetEngineErrorStatus routines (located in enmgr.dll) should be used. For error and status conditions associated with the Hardware Setup File or Hardware Selector, the DSGetHWMgrErrorStatus routine (located in hwmgr.dll) should be used.

NOTE: The DSGetEngineErrorStatus call is actually inside Engine Manager (enmgr.dll). Note also that Engine Manager maintains an "error/status listbox" window which can be made visible using the DSShowEngMgrStatusWindow call. This status window shows a history of both status and error conditions, including both those resulting from DSPower series DLL calls and generated by DSP Engines. For complete information on error handling in Engine Manager, see section 7.5, Error Handling in Engine Manager.

Below is an example showing error investigation after a DSAssignBoard failure:

```
if (!DSAssignBoard(hEngine, szBoardDesignator, uBusType, uIOBaseAddr,
uMemBaseAddr)) {

    nErrorType = DSGetEngineErrorStatus(hEngine);
    if (nErrorType == NULL) nErrorType = DSGetEngMgrErrorStatus();
    if (nErrorType == NULL) nErrorType = DSGetHWLibErrorStatus();
    ...do error processing...
}
```

In the above example, the actual return value of DSAssignBoard would be NULL in the case of failure, since a non-NULL value would be a valid board (hardware) handle. Thus, to find out more information, the DSGetEngineErrorStatus, DSGetEngMgrErrorStatus, and DSGetHWLibErrorStatus calls are checked. Note that DSGetEngineErrorStatus requires a valid engine handle as an input parameter. Thus, for problems related to a DSEngineOpen call, the DSGetEngineErrorStatus function should be avoided.

Below is a listing of error values returned by DSGetHWLibErrorStatus and DSGetEngineErrorStatus, along with a brief description of their meaning. These constants can be found in the hwlib.h include file; for a complete list of all DSPower series software error conditions by error number, see Error and Status Condition Numeric List and Cross-Reference, in the Overview section of this chapter, Error and Status Conditions. Note that in C/C++ programs, it is safest to treat these error definitions as integer types, since some values are "positive" and

some "negative". See Error and Status Condition Numeric List and Cross Reference, above, for more information about this grouping.

Hardware Library Error Values

DSDSPFILENOTFOUND

DSHARDWARENOTRESPONDING

DSINVALIDBOARDHANDLE

DSCOULDNOTOPENTEMPLATEFILE

DSCOULDNOTCREATESOURCEFILE

DSCREATINGENGINEPROGRAMERROR

DSUNABLETOALLOCATEMEMORY

DSUNABLETOREADTEMPLATEFILE

DSERRORINDATAPARAM

DSBOARDDOESNOTSUPPORTCALL

DSINVALIDWORDLENGTH

DSINVALIDMEMORYTYPE

DSINVALIDBOARDDESIGNATOR

DSBOARDNOTINHWSETUPFILE

DSALLBOARDHANDLESALLOCATED

DSINVALIDPROCESSORNUMBER

Related Topics

General DLL Error and Status Conditions

Engine Error and Status Conditions

Hardware Manager Error and Status Conditions

Hardware Library Error and Status Conditions

Signal Processing Library Error and Status Conditions

General Topics

Error Handling in Engine Manager

Error Handling in Hardware Manager

Error/Status Window in Engine Manager

Error and Exception Handling in DSPower-HWLib and DSPower-SPLib Software

DSDSPFILENOTFOUND

Typically occurs after DSLoadFileBoard or DSLoadFileProcessor call. Indicates a DSP Program File could not be found.

DSHARDWARENOTRESPONDING

Typically occurs after a DSInitBoard call. Indicates DSP/analog hardware not present or not installed correctly.

DSINVALIDBOARDHANDLE

Board handle was invalid.

DSCOULDNOTOPENTEMPLATEFILE

A template file needed by a high-level function could not be opened.

DSCOULDNOTCREATESOURCEFILE

A DSP Engine source code file being generated by a high-level function could not be created.

DSCREATINGENGINEPROGRAMERROR

An error occurred when compiling or linking a DSP Engine source code file(s).

DSUNABLETOALLOCATEMEMORY

Memory for the function could not be allocated

DSUNABLETOREADTEMPLATEFILE

An error occurred reading a template file needed b a high-level function.

DSERRORINDATAPARAM

A parameter passed to a high level function in a data structure was invalid.

DSBOARDDOESNOTSUPPORTCALL

The hardware type does not support the call.

DSINVALIDWORDLENGTH

A wordlength parameter passed to a memory transfer function was invalid.

DSINVALIDMEMORYTYPE

A memory type parameter passed to a memory transfer function was invalid.

DSINVALIDBOARDDESIGNATOR

The board designator string was not recognized, or not listed in the Hardware Setup File.

DSBOARDNOTINHWSETUPFILE

The board handle or designator is no longer listed in the Hardware Setup File

DSALLBOARDHANDLESALLOCATED

No more board handles can be allocated.

DSINVALIDPROCESSORNUMBER

The processor number was out of range vs. the number of processors on the hardware.

7.2.5 Signal Processing Library Error and Status Conditions

This section not available yet.

7.3 DSP Engine Error and Status Conditions

DSP Engine error and status conditions and text displays are generated and returned by programs such as Hypersignal-Macro series software or MATLAB, even though they may appear in status boxes or listboxes maintained by DSPower-Block Diagram software or a DSPower series DLL. For example, Engine Manager, which is part of DSPower-HWLib and DSPower-SPLib software, offers an error/status listbox which can be displayed as a debug tool, and which shows error and status conditions and text displays generated by DSP Engines as well as itself and other DSPower series DLLs. For more information, see Signalogic DSP Software Users Guide section 7.5.3, Error/Status Window in Engine Manager.

7.3.1 Hypersignal Error and Status Conditions

This section not available yet.

7.3.2 MATLAB Error and Status Conditions

This section not available yet.